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EDITORIAL

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Parasomnias – insights and developments

In the new International Classification of Sleep Disorders (2nd Edition), parasomnias are defined as "undesirable physical events or experiences that occur during entry into sleep, within sleep, or during arousals from sleep. These events are manifestations of central nervous system activation transmitted into skeletal muscle and autonomic nervous system channels, often with experiential concomitants." [1] They are generally divided into those arising from non rapid eye movement (REM) (e.g. confusional arousals, sleepwalking, sleep terrors) and those occurring during REM sleep (e.g. REM sleep behavior disorder, nightmare disorder). The category of parasomnias comprises some of the most exceptional behavior disorders because complex and apparently purposeful, goal-directed behavior is associated with a deep sleeping brain. This combination not only stimulates our scientific interest but also challenges our understanding of the interaction of mind, brain and body. Although the knowledge and scientific interest have been growing in recent years, the neurobiological mechanisms underlying parasomnias remain unclear.

The current issue of *Somnology* presents six papers on different aspects of parasomnias and therefore provides an excellent opportunity to gain more insight into the pathophysiology, associated disorders and diagnostic tools being employed.

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A family history of disorders of arousals may often be present, but recent studies are not unanimous [2]. Studies of the genetic background are rare and mainly based on twin studies. In his review, **Peter Young** summarizes current knowledge of the genetic basis of some non-REM (NREM) and REM sleep parasomnias. However, the author emphasizes that precise guidelines for the diagnosis and differential diagnosis of parasomnias, as recently suggested [3], are important especially for family studies in order to clearly identify affected and unaffected members.

Epidemiologic studies suggest that parasomnias occur more frequently than previously assumed [4]. In particular, disorders of arousal are the most frequent of the NREM sleep parasomnias and are especially common in childhood. The diagnosis may be difficult to ascertain and at times can be easily overlooked or misdiagnosed. **Oliviero Bruni and coworkers** reviewed the main forms of childhood parasomnias, including disorders of arousal, parasomnias associated with REM sleep and other parasomnias. In cases of diagnostic uncertainty, the authors emphasize that video-polysomnography is essential to differentiate a parasomnia from other motor activity during sleep.

NREM parasomnias may be difficult to differentiate from epileptic phenomena, particularly from nocturnal frontal lobe epilepsy (NFLE). This issue is addressed in the paper by **Pasquale Montagna and colleagues**. The authors provide a comprehensive review on the main features of NFLE and the arousal parasomnias, suggesting that both conditions share a common underlying mechanism. In addition, both disorders may have abnormal arousal mechanisms triggering motor patterns in the medial frontal lobe regions.

Conditions other than epilepsy may also mimic primary disorders of arousal. These can include sleep related breathing disorders and their therapy. **Carlos H. Schenck and Mark W. Mahowald** conducted an extensive literature search and report that more than two-

thirds of the parasomnias and their variants recognized in the ICSD-2 can be associated with sleep-disordered breathing. The authors include a review of a current classification of abnormal sexual behavior during sleep (sexsomnia), a distinct variant of confusional arousals and sleepwalking [5]. An illustrative case report of obstructive sleep apnea with "sexsomnia" is also included with their review.

Disturbed sleep is among the most frequent and earliest complaints in patients with Parkinson´s disease (PD). Particularly, REM sleep behavior disorder (RBD), which may precede the clinical manifestation of PD for years, has been suggested to reflect an early sign of the disease [6]. In their study, **Svenja Happe and coworkers** examined the frequency of nocturnal restlessness and vivid dreams in PD patients using, amongst others, the Parkinson´s Disease Sleep Scale (PDSS). They found that the PDSS is a useful tool for identifying general sleep disturbances not previously known in PD patients, but not for analyzing the frequency and severity of restlessness and distressing dreams suggestive of RBD.

In view of a general paucity of validated instruments for the evaluation of parasomnias, **Stephany Fulda and coauthors** have developed the Munich Parasomnia Screening (MUPS) questionnaire, a self-rating instrument to assess the lifetime prevalence and current frequency of parasomnias and nocturnal behaviors in adult persons. The results of the study suggest that the MUPS is a feasible instrument for clinical practice and research and appears to be easy to use and a valid instrument in the recognition of nocturnal behaviors, including parasomnias.

Conflict of Interest: none.

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